The most difficult, as well as the most interesting and important, diseases which fall within the scope of pediatrics, are the communicable diseases. The specialist in pediatrics must be exceedingly well trained in this field, for here come a great many of his emergency problems in which the outcome is greatly influenced by the promptness and accuracy of his diagnosis and treatment.

One of the greatest opportunities in pediatrics is that of clinical research conducted along the methods suggested by Sir James Mackenzie. The child is an ideal subject for the type of accurate and detailed observations necessary for the scientific study of disease and is altogether unrivaled by any experimental animal. In childhood, disease problems usually present themselves as entities unaccompanied by the numerous complicating factors which obscure observations in the adult. The pediatrician sees his patients frequently from birth to adolescence and can trace the beginnings of disease, as well as the modifications brought therein, by growth and development. Here are to be found the recognizable first-infection forms of tuberculosis and rheumatic fever; we should be alert to detect similar first-infection forms of other diseases important to adult life. Some of the most profound problems of modern medicine are more likely to be solved by the pediatrician, if he is sufficiently alert, than by any other specialist.

These clinical problems are numerous, but can be aptly illustrated by one or two examples. In the child is to be observed the interplay of endocrine influences as they affect growth, developmental changes, and the catalysis of sexual maturity. The problems of endocrin deficiency or of superabundance can be observed from their inception, the problem of therapy is thus made far more hopeful, and the opportunity for scientific study is infinitely superior to the static end-result which is presented to the observation of the internist.

Another clinical research in which the pediatrician must maintain interest and in which he has enormous opportunity in the field of his own practice is the problem of allergy, the mysterious mechanism of altered reactivity which is important to almost every field of medicine. Allergic problems which present in later life are extremely complex, in childhood one confronts the problem in its simplest guise. Only the pediatrician has the opportunity to follow the child through years which permit him to observe the modifications brought about by heredity, prenatal state, nutrition, environment, nervous influences, infection, the response to therapy, and the multitude of factors which influence the problem before it reaches the internist later on. I do not believe that there is any greater opportunity presented to the modern pediatrician. One cannot escape the conviction that the accumulated laboratory data lacks only an ingenious clinical approach to open the door to tremendous advances in our knowledge. I am convinced that a continued and truly scientific study of this condition in clinical pediatrics should be far more productive of valuable conclusions than any similar expenditure of energy in older patients or in experimental animals.

It is, I think, unlikely, that the pediatrician will quickly be supplanted by any other type of medical practitioner. The public has been trained to demand intensive care of a restricted output of children. Continued survival of our speciality necessitates, however, that the pediatrician bring to his task highly specialized attributes of training and skill. Artificial feeding of infancy has been so simplified and standardized as no longer to make the greatest demand on this skill. The pediatrician must keep abreast of changing trends and be prepared to meet a multitude of demands in every aspect of child care, nutrition, disease prophylaxis, psychological guidance, and must offer a superior technique in the treatment of the ill child. The scientific advance of this specialty will be greatly served by proper appreciation of the extraordinary opportunities in this field for clinical research.

384 Post Street.

PERTINENT COMMENTS ON ANESTHESIA*

By HARRY J. SMITH, M.D.
Oakland

KNOWLEDGE concerning a fact goes through certain phases. These are: Discovery, appreciation, and investigation. Knowledge of anesthesia, being a fact, went through this same process in development.

Anesthetic agents were known many years before their practical application, but at last came the discovery of the fact and their use quickly followed. During the next phase, or that of appreciation, the use of ether became quite universal. It seemed so safe and satisfactory that no great effort was put forth to find anything better.

The "A. A. A." that nurtured modern surgery—anesthesia, antisepsis, and asepsis—never needed a court decision to prove their constitutionality. They were proved beyond a doubt by their benefit to mankind.

However, anesthesia lagged behind in the rapid development of medical and surgical science. Whether due to a false sense of safety or not, the administering of ether was delegated to others who did not have the scientific training of the surgeon. Abroad that was not the case, perhaps because chloroform (which was more popular) was recognized as a dangerous agent when used by the unskilled and, therefore, was never let out of professional hands. During this phase of anesthetic knowledge, surgery made great advances in technical skill and mechanical devices to assist in operations. Also, surgical science was advanced by extension of medical curricula and development of clinics, while a few lectures sufficed to stimulate a

* Chairman's address before the Anesthesiology Section of the California Medical Association at the sixty-sixth annual session, Del Monte, May 2-6, 1937.

zest for further enlightenment of the student in anesthesia.

INVESTIGATION AND RESEARCH WORK AT THE PRESENT TIME

Fortunately, we are now entering or progressing in the phase of investigation and research. During the years 1880 to 1903, much work and experimentation was carried on relative to the placing of drugs and solutions near or into the spinal canal. Spinal anesthesia was the outcome, and directly many agents were tried and various techniques used. After a few years, accumulated statistics pointed a discouraging finger at this method, and it was not until more information and less toxic drugs were available that the revival of spinal anesthesia became general.

The use of gaseous agents depended on accurate mechanical devices, lack of which handicapped the development of nitrous oxid and ethylene. The ingenious brain of the late E. I. McKesson—and we may well pause to honor him—produced some of the lacking facilities. Others followed, until now we have the means of regulating doses of gases with exactness.

PROPAGANDA FOR NEW PREPARATIONS

At present, we are in the midst of a flood of literature and frequent, but not unwelcome, visits of detail men proclaiming the virtues of their brand of sedative, analgesic and anesthetic, for oral, rectal, and intravenous use. We hardly hear of these before their use in thousands of cases are reported, and some of our colleagues, without special knowledge of anesthesia, are carried away by the description of the ease and simplicity of the drug being exploited, and are frequently rewarded with unsatisfactory or disastrous results. Here may be a good place to mention another observation. New appliances that are constantly superseding those in use are demonstrated a time or two to anesthetic technicians and, without further instruction, the salesman leaves them to develop skill in using the machine on a human being who is paying for expert care. The use of such a potent gas as cyclopropane has been tried in these devices by the same technicians with little, if any, knowledge of its pharmacologic or physiologic action.

PROCEDURE IN CAPE TOWN, SOUTH AFRICA

Perhaps such a situation as exists in Cape Town [1] might tend to put anesthesia on a sounder basis. There the anesthetist is put on the defensive and is charged with all possible accidents, and has to vindicate himself in a public trial following a police postmortem examination. The newspapers make capital of the misfortune, and the gossips have a ready-made subject for conversation. It would, at least, be a novel experience for an anesthetist hereabouts to be of enough importance to be discussed over the teacups!

THE PROBLEM OF THE NONMEDICAL ANESTHETISTS

Whatever reasons exist for nonmedical anesthetists have been discussed many times. The financial profit to hospitals is the main one. The only argument against professional anesthetists that I have heard was that there were not enough graduates in medicine interested in such a specialty to properly handle the situation. In the third largest center of population in California, the writer knows of several doctors who looked longingly at such a career and finally abandoned it because the hospitals were practicing medicine by employing technicians and making a profit on the work they did. By this procedure the advancement of the science, as well as the living, for members of our profession are stymied.

Frank H. Lahey [2] says: "The training of men in anesthesia has not kept pace with the other progress in this field. Hospitals will ultimately realize that the present attitude regarding relatively low-cost anesthesia will prove a penny-wise and pound-foolish policy. Certainly, one of the present practices in anesthesia should be condemned: in the light of the present progress in anesthesia, it is quite wrong for hospitals to show a profit by charging for nurse anesthetists, even though this profit is utilized in other departments of the hospitals—if there should be a surplus income for anesthesia, it should be devoted to that for what it is paid by the patient, that is, the best anesthesia possible and the training of better anesthetists."

Why not devote more time to the teaching of anesthetic technique in nursing schools, if that training is all that is necessary in producing a proficient anesthetist? At least a better course in medical curricula would be a help to those who chose surgery as a specialty, since by recent decision they are directly responsible for the supervision of the technician in the administration of the anesthesia as well as the outcome.

Arthur M. Wright [3] says: "The progress of anesthesia as a specialty has been apathetic. For this apathy the medical school has been chiefly responsible, the surgeon particularly and the anesthetist specifically." Again, he says: "Changes and experiments must come, and future advances must be made with confidence and promise. The surgeon must walk, arm in arm along the road of clinical efficiency." Let us see how this "arm in arm" procedure works out in California. Quoting from the decision of the Supreme Court of May 18, 1936: "The findings, which are amply supported by the testimony in this case, show conclusively that everything which was done in the present instance, and is generally done in the administering of anesthetics, was and is done under the immediate direction and supervision of the operating surgeon and his assistants. . . . We are led further to accept this practice and procedure as established when we consider the evidence of many surgeons who supported the contention of the defendant, and whose qualifications to testify concerning the practice of medicine in this community and elsewhere were beyond dispute."

WHY A MORE COÖPERATIVE PROFESSIONAL UNDERSTANDING SHOULD EXIST

The "road" along which such an "arm-in-arm walk" proceeds certainly will never advance the science of anesthesia, and will not bring to the surgeon's patients those benefits to which they are rightly entitled. The only way in which the surgeon

and anesthetist can walk "arm-in-arm" is on a basis of equality, not on the basis that the surgeon is in the "immediate and direct supervision of the anesthetist's work." In other words, the anesthetist should be a specialist with whom the surgeon can discuss problems as he would with an internist, and one in whose hands he would confidently leave his patient after his diagnosis and operative procedure were determined.

ENCOURAGING SIGNS

Perhaps we should not be discouraged by the slow development of our science as a specialty. There are certainly many encouraging events happening, and these events are being spaced by shorter intervals. Never was there a time when the search for new agents was so keen. In the pharmacology and physiology departments of our medical schools there is a renaissance of interest in the anesthetic problem. Several centers are open to those who would pursue knowledge and skill in the art. The genius of inventors has placed at our disposal more accurate mechanical equipment for administering inhalation anesthesia, and through accumulated statistics and writings are brought the views of others on the various drugs and methods of administering them.

The growth of our societies has been steady, and if we read aright there is a growing interest in anesthesia throughout our own country, as well as abroad.

Our great achievement will be to continue to do our best to relieve suffering and to render painless these ordeals, both natural and accidental, that come to our fellow man.

3115 Webster Street.

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SURGICAL PRACTICE: LOOKING FORWARD*

By JOHN HUNT SHEPHARD, M.D.
San Jose

THE ideals of the medical profession always have been, and always will be, beautifully expressed by an inscription over the amphitheater in old Rush Medical College, which reads: "Dedicated to the relief of suffering and the prolongation of life."

ETHICAL CODE OF PHYSICIANS

For centuries the medical profession has marched forward under its self-established principles of ethics, which are quite incomprehensible to the average layman. In essence, these principles may be summarized in three words: "Service to humanity." From time to time, down through the centuries, we find slight glimmering reflections of these principles in various crafts, trade-unions and industry, but never without the stronger light of selfishness almost completely obliterating these reflections.

Health is the greatest personal and national asset; yet we, the purveyors of health, are being told that we are incompetent to direct the distribution of our knowledge and service, even though we have made the United States the healthiest country in the world—a country where the highest attainments of medical service, both preventive and curative, are available to each and all who will accept of our services, and at a price within their ability to pay.

I do not believe there has ever been an individual denied medical service on account of his or her lack of material worth. It has been this willingness on the part of the members of our profession to serve their fellow man that is largely responsible for the periodic attacks made by the self-styled "social altruists" to attempt to crush us under their heel and make us subservient to their fads and fancies.

Unfortunately, there have always been and always will be members of our profession unwilling or unable to see the light or, if seeing, unwilling to follow through the portals of sacrifice and devotion so necessary to their calling.

The progress we have made (and our journey will never end) has been the result of working together, of our organized efforts for the public welfare, of the daily living according to the ideals set forth in our principles of ethics; and if these are ever forsaken, our value to humanity will drop like the value of tampered currency.

EARLY LEGAL REGULATIONS OF MEDICAL PRACTICE

A glance at the early legal regulations of the practice of medicine is not only interesting, but is evidence that the thoughts I wish to submit for your consideration were in the minds of men as long ago as 1736. The earliest legislation pertaining to the practice of medicine enacted in this country was passed by the colony of Virginia in 1639, and concerned that much discussed question of today, "medical economics." It provided that it should be lawful for any person believing the charge of a physician or chirurgeon to be unreasonable, to have such physician or chirurgeon arrested, and cause him to be brought before the proper court where he should declare upon oath the true value, worth and quantity of his drugs, and medicines administered to or for the use of the patient. The court thereupon allowed the physician or chirurgeon such fee as in its discretion it found fit.

From this it is logical to assume that even at this early period of our Colonial settlement there were those who felt that medical service should be provided at the expense of the state, namely, by some form of taxation.

In 1736 the Virginia Assembly passed an act regulating the fees and acts of "practitioners in physic." This act may well be considered the first legal recognition of specialization in the practice of medicine, since it made a distinction between the charges of "surgeons and apothecaries," whose training had been limited to serving an apprenticeship to those trades, and those who had studied physic in any university and taken a degree therein.

*Chairman's address before the General Surgery Section at the sixty-sixth annual session of the California Medical Association, Del Monte, May 2-6, 1937.